(57) Abstract

The invention relates to a method for performing synchronization operations of a receiver (1) to a received code-modulated spread spectrum signal. At least one reference code (r(x)) is used in the method, which reference code corresponds to a code used in the modulation. The frequency shift of the received signal and the code phase of the code used in the modulation are determined in the method. The method also includes at least the following steps:

– sample vector formation step, in which samples (101) are taken from the received signal for forming the sample vectors (p(1), p(2)...p(N)),

– correlation step (102, 103, 104, 105), in which a first Hartley transform ($\overline{R}(x)$) is formed on the basis of said reference code (r(x)), and a second Hartley transform (P(i)) is formed on the basis of each sample vector (p(1), p(2)...p(N)), a multiplication is performed between the first Hartley transform ($\overline{R}(x)$) formed on the basis of said reference code and the second Hartley transform (P(i)) formed on the basis of each sample vector (p(1), p(2)...p(N)), an inverse Hartley transform is performed on each multiplication result ($M_x(i)$), and

– acquisition step (110), in which the frequency shift and code phase are acquired on the basis of the inverse Hartley transforms ($m_x(i)$) of the multiplication results ($M_x(i)$).

Fig. 1